

**REMARKS**

Claims 13-15 and 17-23 are pending.

I. The obviousness rejections of independent claim 13 and the dependent claims 14, 17, 21 and 23 in view of the combination of Thomas and Eumura are traversed because (1) a "stereo microscope *per se* is claimed and not taught or suggested by either reference as required by MPEP 706.02(j) and (2) also the suggested combination of references (related to photocopies, and cameras) is *technically incapable* of teaching the claimed limitations because the suggested combination of references would require a substantial reconstruction and redesign of the elements shown as well as the basic principle under which the primary references construction was designed to operate ( MPEP 2143.01 citing *In re Ratti*) .

U.S. Patent 4,161,756 by Thomas describes a zoom system for a photographic, cinematographic cameras, television camera, or photocopiers (see Field of the invention). These cameras have long focal length and object distances and therefore the accuracy needed for the movement of the zoom lenses are not very critical. In contrast to this, the claimed *stereo microscope* (also see MPEP 2111.02) has of course in comparison a much shorter focal length and object distances. (For example, focal length less than 10 cm is typical for stereomicroscopes.) Therefore, clearly a stereomicroscope as claimed requires a much higher accuracy for the positioning and movement of the lenses in the zoom system than the cameras for photocopiers, etc., as disclosed in Thomas. For example, the disclosure of Thomas is known since 1979, but no one skilled in the art was able to implement Thomas's photocopier teachings to the different field of microscopy or

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stereomicroscopes, thus far. This is because photocopiers and cameras, etc., are non-analogous art and not relevant to the claimed stereo microscope art (see MPEP 2141.01(a) i.e., the references teach different structures (longer focal lengths) for different purposes(not as accurate image as in a stereo microscope). Uemura et al. also deals with improving the zoom system of video cameras (see col. 6, line 28), and not stereo microscopes.

Thus in summary, applicants respectfully assert that the reasoning of the Office Action is flawed and legally insufficient, first because it ignores the claim language that claims "a zoom system in a *stereo microscope*" and cites an unrelated zoom system for cameras and photocopiers, and second the reasoning ignores the fact that the cited references cannot technically produce the required optical performance to be comparable to stereomicroscopes because the structures are so different. Therefore, the references are technically not applicable to the claimed invention and cannot be said to teach or suggest the claim limitations of claim 13 under MPEP 706.02(j) to establish a *prima facie* case of obviousness as is required by 35 USC 103 because the suggested combination of references would require a substantial reconstruction and redesign of the elements shown as well as the basic principle under which the primary references construction was designed to operate ( MPEP 2143.01 citing *In re Ratti*), i.e., photocopiers with long focal lengths verses stereo microscopes with short focal lengths and very exact and small focus adjustments.

Therefore, for at least these overall reasons, claim 13 is not taught or suggested by the newly cited references in the final rejection and a *prima facie* case of obvious under MPEP 706.02(j) is not established by the reasoning of the office action at pages 2-3.

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II. Additional discussion of why Thomas is not technically compatible with the claim language and does not teach or suggest the claim language and instead "teaches away".

A detailed review of Thomas shows that the operation between the reference points is driven by a uniform speed for all motors, regardless of the distance (see column 3, lines 7 "speed determined by the cadence of the stepping pulses lead 36" and also column 3, lines 36-41 "the two servomotors operate ... until their input signals match the feedback signals from the position sensors"). *That means that Thomas teaches "driving to a target" with uniform speed, which results in phases during the movement in which the image is not sharp since, for example, the first lens has reached their next reference point but the other is still away from their reference point (and still moving).* The closed loops 9, 9' and 11, and 10, 10' and 12 controls only the target positions and *are not able to ensure that these positions are reached at the same time.*

Also, by combining the invention by Thomas with drives of Uemura (without a monitoring system) the same shortcoming of having a not sharp image while adjusting remains, since also this combination can only act in this "driving to a target" manner.

In contrast to this, the present invention as claimed in claim 13 ensures that the mathematical constructed reference points are reached at the same time by the lenses, *i.e., the driving motors are driven corresponding to the curve* and therefore the image is always sharp during adjustment, by which is very important for the user of a microscope, i.e., claim 13 claims:

13. An arrangement for directly controlling the movement of a zoom system in a stereo microscope, comprising:

direct driving motors for at least one moving lens system wherein the driving motors are

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controlled by a control unit which reads calculated pre-stored values of reference *points from a mathematical controlling curve for directing the movement* of the at least *one moving lens system by controlling the driving motors in a corresponding manner* without necessitating use of mechanical generation of the mathematical controlling curve and without an additional monitoring system (*emphasis added*).

*Therefore, the image always inherently remains sharp, due to the claimed structure, as opposed to the driving to the target method of Thomas.*

For support, the description for the claimed feature discussed above can be found on page 3, lines 25, i.e., "... the linear drives ... are controlled simultaneously and cover a number of individual steps per unit of time" (i.e., a different speed) "depending on the mathematical curve."

In this way, the moving optical elements reach their reference positions to be set according to optical computation (data sheet) *in discrete individual steps of varying magnitude* depending in the desired zoom resolution." (*emphasis added*).

III. "Omission of an element with retention of the element's function is an indicia of unobviousness"  
(MPEP 2144.04 II.B.)

Claim 13 explicitly claims:

by controlling the driving motors in a corresponding manner *without necessitating use of mechanical generation of the mathematical controlling curve and without an additional monitoring system* (*emphasis added*).

MPEP 2144.04 II B citing *In re Edge* makes it clear that applied to the present invention the fact that applicants eliminated the monitoring system but still perform the function of a monitoring system is a strong indicia of unobviousness. This is another reason for allowance of claim 13.

IV. The obviousness rejection of claim 13 in view of Biber et al., US 5,825,535, Thomas and Uemura

Applicants traversed the 102 rejection of claim 13 based on Biber in the previous response, and currently the USPTO cites Biber in combination with the Thomas and Uemura in a second obviousness rejection of claim 13. It is non-standard to have two obviousness rejections, the first based on Thomas and Uemura and a second based on Biber, Thomas and Uemura because it logically implies that one of the rejections of claim 13 is logically incorrect in its reasoning.

In any event, the arguments above equally apply because there is respectfully no logical reason why one skilled in the art would combine Thomas and Uemura to make up for the deficiencies in Biber because first, Thomas and Uemura are from the non-compatible arts (to Biber and the present invention) of photocopiers and video cameras with longer focal lengths and object distances, and therefore the accuracy needed for the movement of the zoom lenses are not very critical, and second, they also do not teach or suggest the limitations that the USPTO alleges that they teach or suggest on page 5 of the Office Action. Namely, Thomas does not drive the motors in a corresponding manner as discussed above, because the image is not always in sharp focus, and Uemura does not make up for this shortcoming.

The dependent claims depend from claim 13 and should therefore also be allowable.

V. Requirements for an obviousness rejection

MPEP 706.02(j) is specific regarding the required elements of an obviousness rejection and applicants respectfully assert for the record and for purposes of appeal that the reasoning provided

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in the final rejection does not respectfully meet these specific requirements.

Due to the above, although the Examiner is respectfully believed to be well versed in the law of obviousness, and combination of references law, the relevant law is respectfully reproduced below for completeness of the record and to expedite prosecution.

In order to establish a *prima facie* case of obviousness under 35 USC 103 according to section 706.02(j) of the Manual of Patent Examining Procedure (MPEP) the following criteria must be met:

The MPEP Standard for Combining/Modifying References

The Manual of Patent Examining Procedure, section 706.02(j) sets forth the standard for combining and/or modifying prior art, and states:

To establish a *prima facie* case of obviousness, three basic criteria must be met. **First**, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. **Second**, there must be a reasonable expectation of success. **Finally**, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure.

*In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP § 2143 - § 2143.03 for decisions pertinent to each of these criteria. [Bold emphasis provided.]

These requirements are not respectfully discussed at all in the rejection which at least respectfully provides insufficient reasoning for an obviousness rejection at pages 2-6 of the Office Action, wherein at least no specific discussion of motivation to combine, and reasonable expectation of success is provided as is required.

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VI. Conclusion

It is respectfully asserted that all of the rejections have been traversed for the reasons above.

Therefore, it is requested that all the claims be reconsidered and allowed.

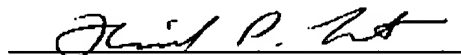
In light of the *FESTO* case, no argument made herein was related to the statutory requirements of patentability unless expressly stated herein. No argument made was for the purpose of narrowing the scope of any claim unless Applicant has explicitly stated that the argument is narrowing.

Please note the change of correspondence address.

A claim appendix is attached for the Examiner's convenience.

Respectfully submitted,

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